

**Patent claims**

1. A method for air conditioning a motor vehicle, in which, in a heating mode, the passenger compartment of the motor vehicle is heated via a passenger compartment heat exchanger through heat pump operation of a refrigerating circuit comprising a compressor, a condenser, a throttle valve and the passenger compartment heat exchanger, with the temperature in the passenger compartment being recorded by measurement technology, characterized in that in addition the atmospheric humidity in the passenger compartment is recorded by measurement technology, and that when the temperature is in a predefined range and the atmospheric humidity reaches a defined threshold, the mass flow of refrigerant in the circuit is throttled upstream of the passenger compartment heat exchanger (5), in such a manner that the moisture contained in the air stream passing the passenger compartment heat exchanger (5) is at least substantially condensed at the passenger compartment heat exchanger (5), and the moisture which has already condensed at the heat exchanger (5) remains at the heat exchanger (5), and in that the passenger compartment is heated by a heat source which is outside the circuit (1) until the temperature in the passenger compartment exceeds an upper limit temperature of the predefined range.

2. The method as claimed in claim 1, characterized in that the passenger compartment is heated by a heating heat exchanger (24), which serves as a heat source, of an engine cooling circuit (12), which has heated engine coolant flowing through it and also has

an air stream that is routed into the passenger compartment passed through it.

3. The method as claimed in claim 2, characterized in that until the mass flow of refrigerant in the refrigerating circuit (1) is throttled, both the refrigerant and the engine coolant are heated by means of the compressor (2), which acts in the heat pump, of the refrigerating circuit (1), with heat being removed from the refrigerating circuit (1) via a countercurrent heat exchanger (23) and transferred to the engine coolant.

4. The method as claimed in claim 3, characterized in that the heat is transferred only to the engine coolant of a first section (14), which includes a heating pump (22) and the heating heat exchanger (24), of the engine cooling circuit (12), with a second circuit section (13), which includes the engine (16) and the radiator (17), fluidically decoupled from the first circuit section (14).

5. The method as claimed in one of claims 1 to 4, characterized in that during heating, the air-conditioning system is switched to recirculated air, the refrigerant releasing its heat in the countercurrent heat exchanger (23) and being throttled in the throttle valve (4) to a pressure which correlates with a temperature such that the temperature at the surface of the passenger compartment heat exchanger (5) is below the dewpoint temperature which leads to fogging of the windows.